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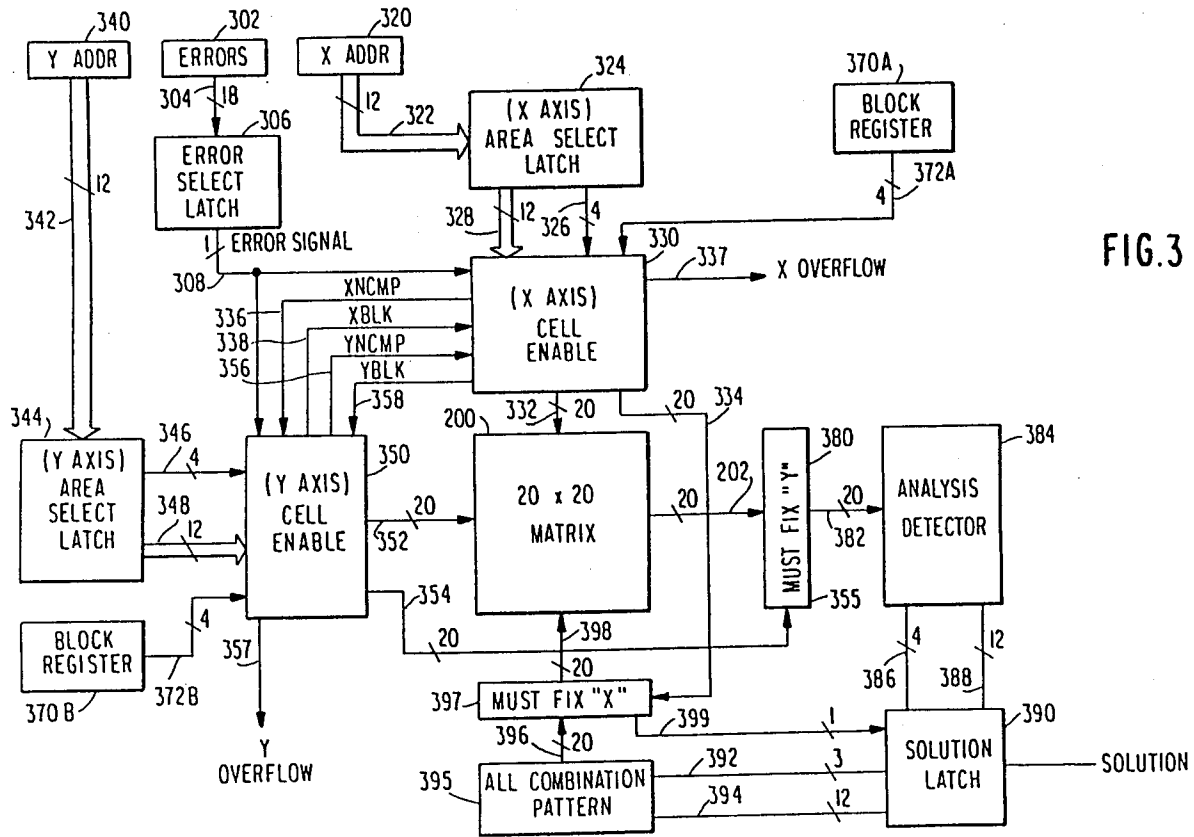
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IBM Deutschland GmbH Patentwesen und
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W-7030 Böblingen(DE)**(54) **Apparatus and method for real time data error capture and compression for redundancy analysis of a memory.**

(57) Fail information from testing of a DUT memory array is captured and compressed by utilizing a compression matrix which is related in size to the available redundancy associated with the DUT (device under test) memory array, and which, in essence, defines the limits of redundancy repair. The compression matrix includes a plurality of matrix cells fewer in number than the number of memory cells in the DUT memory array and is arranged in a matrix of compression rows and compression columns. The compression matrix is loaded with the fail information concurrently with testing of the DUT memory array. There are also provided column and row selects for storing, and assigning to each compression column or row of at least a portion of the

compression columns and rows, a different column or row-address portion of the fail information, and for providing selection of compression columns and rows according to stored column and row address portions. Comparators compare, for each compression and column, a count of matrix cells set along each column and row to a predetermined redundancy value, and, when the count becomes greater than the redundancy value, there is a designation of a memory array column or row as a "must fix", and there is a blockage of storage of row-address or column-address portions, respectively, of fail information having the same column-address or row-address portion as that of the column or row that has been designated as a "must fix".

EP 0 424 612 A3





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EUROPEAN SEARCH REPORT

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EP 90 11 3051

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
D,X	US-A-4 628 509 (I. KAWAGUCHI) 9 December 1986 * column 2, line 58 - line 68 * * column 3, line 36 - line 55 * * column 4, line 51 - line 59 * * column 5, line 40 - column 6, line 17; claims 1,2; figures 5-7 *	1,2,12, 13,23	G11C29/00 G06F11/22 G06F11/20
D,A	---	4,6,7, 10,11, 15,17, 18,21	
D,X	IBM TECHNICAL DISCLOSURE BULLETIN vol. 29, no. 6, November 1986, pages 2756 - 2758; 'Best Solution Generator for Redundancy' * the whole document *	1,12	
D,A	---	3,4,8, 11,14, 15,19, 22,23	
A	US-A-4 736 373 (J. D. SCHMIDT) 5 April 1988 * column 4, line 19 - column 5, line 20 * * column 7, line 14 - column 8, line 29 * * column 9, line 9 - line 22; figures 1,2,4 *	1,4,5, 8-10,12, 15,16, 19-21,23	TECHNICAL FIELDS SEARCHED (Int. Cl.5) G06F G11C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 14 JANUARY 1992	Examiner JOHANSSON U.C.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			